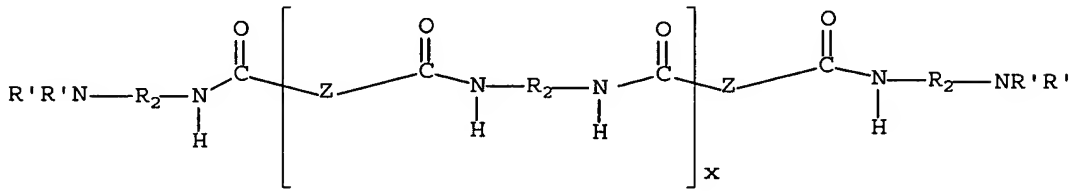
We claim:

1. An epoxy functional surfactant comprising the reaction product of:

i) an amidoamine composition comprising oligomeric amidoamine compounds having the structure:



wherein each R' is independently hydrogen or an alkyl group containing 1-6 carbon atoms provided that at least one R' is hydrogen, R_2 is an aliphatic, cycloaliphatic, or aromatic residue of a primary amine compound having 2 to 24 carbon atoms and optionally containing non-reactive oxygen or at most an average of 4 secondary and/or tertiary nitrogen atoms in the backbone of the primary amine compound, the average of x, based on the amidoamine composition, is at least 0.2, and Z comprises the residue of a polyoxyalkylene polyether polycarboxylic acid compound; with

ii) at least one epoxy resin having a functionality of from greater than 0.8 epoxide group per molecule at an equivalent weight ratio of the epoxy resin to the amidoamine composition of at least 2:1;

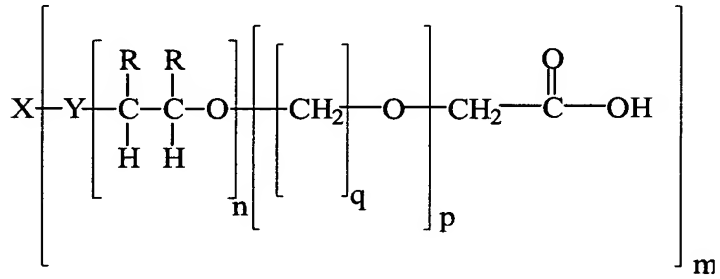
wherein the amidoamine composition comprises the reaction product of primary polyamine compounds with polyoxyalkylene polyether polycarboxylic acid compounds at a corresponding equivalent weight ratio of at least 4.0:1 under oligomeric reaction conditions effective to increase the amine nitrogen equivalent weight of the amidoamine composition by at least 10% over the average acid equivalent weight of the polyoxyalkylene polyether polyacid composition.

2. The epoxy functional surfactant of claim 1, wherein each R' is hydrogen, R_2 is an aliphatic moiety having from 2 to 8 carbon atoms, and wherein x ranges from 0.25 to 2.0.

3. The epoxy functional surfactant of claim 1, wherein x ranges from 0.2 to 1.0.

4. The epoxy functional surfactant of claim 1, wherein R_2 is a residue of a primary polyamine compound comprising ethylenediamine, hexamethylenediamine, 2-methyl-1,5-pentanediamine, or 1,12-dodecanediamine.

5. The epoxy functional surfactant of claim 1, wherein the polyoxyalkylene polyether polycarboxylic acid composition comprises compounds represented by the following formula:



Formula III

wherein X is an initiator molecule residue, the initiator having a functionality of from 1 to 8; Y represents an oxygen or nitrogen atom; each of the R groups are independently hydrogen, an C_1-C_{16} alkyl, aryl, or alkaryl group, provided that at least one R is hydrogen; m is a real number from 1.0 to 8.0; n and p represent the number of repeating units of oxyalkylene groups together ranging from 0 to about 4000, provided that n+p is at least 15, and q ranges from 2 through 4, inclusive, and m is a real number ranging from greater than 1.0 and up to 3.0.

6. The epoxy functional surfactant of claim 5, wherein R independently comprises a hydrogen or a methyl group.

7. The epoxy functional surfactant of claim 5, wherein n+p ranges from 50 to 1000, and q is 2.

8. The epoxy functional surfactant of claim 5, wherein the n units represent an oxyalkylene selected from the group consisting of oxyethylene and a mixture of oxyethylene and oxypropylene groups, p is 0, each R group is hydrogen, and m is a real number greater than 1.0 and up to 2.0.

9. The epoxy functional surfactant of claim 5, wherein m ranges from 1.6 to 2.0, and the number average molecular weight of the polyoxyalkylene polyether polycarboxylic acid composition ranges from 3000 to about 6,000.

10. The epoxy functional surfactant of claim 1, wherein said polyoxyalkylene polyether polycarboxylic acid composition is derived from a polyoxyalkylene polyether polyol composition, and from 90% to no more than 99% of the hydroxyl groups in the polyoxyalkylene polyether polyol composition are converted to carboxyl end groups.

11. The epoxy functional surfactant of claim 1, wherein the equivalent ratio of primary polyamine compounds to polyoxyalkylene polyether polycarboxylic acid compounds is at least 6.0 amine equivalents to 1 acid equivalent.

12. The epoxy functional surfactant of claim 1, wherein the average amine equivalent weight of the amidoamine composition ranges from 1100 or more and up to 10,000.

13. The epoxy functional surfactant of claim 1, comprising at least partially capping the amidoamine composition with a monoepoxy capping agent.

14. The epoxy functional surfactant of claim 13, comprising at least partially capping the amidoamine composition with a monoepoxy capping agent comprising one or more of the unsaturated epoxy hydrocarbons of butylene, cyclohexene, or styrene oxide; epoxy ethers of monovalent alcohols; epoxides of the alkylene oxide adducts of alcohols having at least 8 carbon atoms by the sequential addition of alkylene oxide to a corresponding alkanol; epoxy ethers of monovalent phenols optionally substituted in the o- or p- positions with C_1-C_{21} branched or unbranched alkyl, aralkyl, alkaryl, or alkoxy groups; glycidyl esters of mono-carboxylic acids comprising the glycidyl ester of capric acid, the glycidyl ester of lauric acid, the glycidyl ester of stearic acid, the glycidyl ester of arachidic acid or the glycidyl esters of

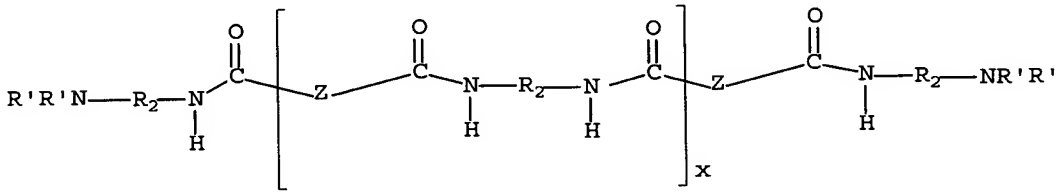
alpha, alpha-dialkyl monocarboxylic acids; epoxy esters of unsaturated alcohols or unsaturated carboxylic acids comprising the glycidyl ester of neodecanoic acid, epoxidized methyl oleate, epoxidized n-butyl oleate, epoxidized methyl palmitoleate, or epoxidized ethyl linoleate; phenyl glycidyl ether; allyl glycidyl ether; or acetals of glycidaldehyde.

15. The epoxy functional surfactant of claim 13, wherein the amount of said epoxy functional surfactant ranges from 2 to less than 6.0 wt.%, based on the weight of solids.

16. The epoxy functional surfactant of claim 1, wherein the epoxy functional surfactant is made in situ.

17. An epoxy functional surfactant comprising the reaction product of:

i) an amidoamine composition comprising oligomeric amidoamine compounds in an amount of at least than 20 wt.% to 80 wt.% based on the weight of amidoamine composition, said oligomeric amidoamine compounds having the structure:



wherein each R' is independently hydrogen or an alkyl group containing 1-6 carbon atoms provided that at least one R' is hydrogen, preferably two R' are hydrogen, most preferably all four R' are hydrogen, wherein R^2 is an aliphatic, cycloaliphatic, or aromatic residue of a primary amine compound having 2 to 24 carbon atoms and optionally containing non-reactive oxygen or at most an average of 4 secondary and/or tertiary nitrogen atoms in the backbone of the primary amine compound, and preferably R^2 is an aliphatic moiety having from 2 to 8 carbon atoms, the average of x based on the amidoamine composition is at least 0.2,and Z comprises the residue of a polyoxyalkylene polyether polycarboxylic acid compound; with

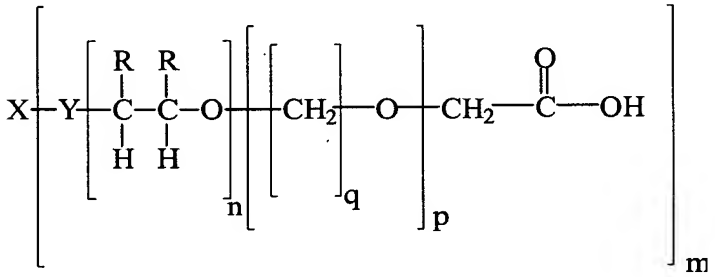
ii) at least one epoxy resin having a functionality of from greater than 0.8 epoxide group per molecule at an equivalent weight ratio of the epoxy resin to the amidoamine composition of at least 2:1;

wherein the amidoamine composition comprises the reaction product of primary polyamine compounds with polyoxyalkylene polyether polycarboxylic acid compounds at a corresponding equivalent weight ratio of at least 4.0:1.

18. The epoxy functional surfactant of claim 17, wherein at least two R' are hydrogen, R_2 is an aliphatic moiety having from 2 to 8 carbon atoms, and wherein the average value of x ranges from 0.2 to 2.0.

19. The epoxy functional surfactant of claim 17, wherein each R' is hydrogen, and R_2 is a residue of a primary polyamine compound comprising ethylenediamine, hexamethylenediamine, 2-methyl-1,5-pentanediamine, or 1,12-dodecanediamine.

20. The epoxy functional surfactant of claim 17, wherein the polyoxyalkylene polyether polycarboxylic acid composition comprises compounds represented by the following formula:



Formula III

wherein X is an initiator molecule residue, the initiator having a functionality of from 1 to 8; Y represents an oxygen or nitrogen atom; each of the R groups are independently hydrogen, an C_1-C_{16} alkyl, aryl, or alkaryl group, provided that at least one R is hydrogen; m is a real number from 1.0 to 8.0; n and p represent the number of repeating units of oxyalkylene groups together ranging from 0 to about 4000, provided that n+p is at least 15, and q ranges from 2 through 4, inclusive, and m is a real number ranging from greater than 1.0 and up to 3.0.

21. The epoxy functional surfactant of claim 17, wherein R independently comprises a hydrogen or a methyl group.

22. The epoxy functional surfactant of claim 17, wherein n+p ranges from 50 to 1000, and q is 2.

23. The epoxy functional surfactant of claim 17, wherein the n units represent an oxyalkylene selected from the group consisting of oxyethylene and a mixture of oxyethylene and oxypropylene groups, p is 0, each R group is hydrogen, and m is a real number greater than 1.0 and up to 2.0.

24. An aqueous dispersion of an epoxy resin comprising the epoxy functional surfactant of claim 17.